

THE U. S. ARMY HEAVY DIVISION: AN APPROPRIATE PLATFORM FOR FORCE PROJECTION OPERATIONS?

**A MONOGRAPH
BY
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Infantry**



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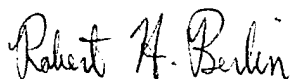
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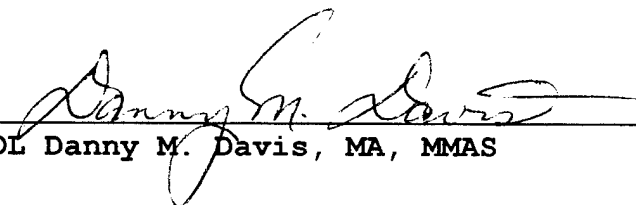
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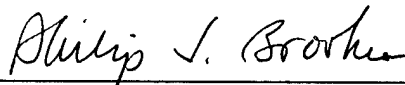
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ABSTRACT

The U.S. Army Heavy Division: An Appropriate Platform for Force Projection Operations? by Major Jay H. Hale, USA, 53 pages.

This monograph seeks to determine whether Army mechanized infantry and armored divisions are appropriate platforms for force projection operations. To establish a context for answering this question, an overview of the strategic environment is conducted. Army participation in accomplishing the strategic vision of engagement and enlargement is reviewed in context of an army predominantly based within the United States and expected to deploy to various contingencies. Next, the heavy divisions' history, composition, and stationing are presented as background to the analysis of the resources required to strategically move the heavy division.

This monograph concludes that the heavy division, though difficult to move, is capable of moving strategically using multiple methods of transportation. The heavy division is also an equipment based force rather than a people based force and in some situations may experience a shortage of dismounted soldiers to accomplish various tasks. Though it may experience some difficulty, the heavy division can successfully conduct operations other than what it is designed for, and allowed some recovery time, be able to provide decisive force in traditional combat missions afterwards. Ultimately, the heavy division is a viable force in the current strategic setting and will likely remain so until advances in weapons technology render heavily armored vehicles obsolete.

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SECTION I

Introduction

The credibility of our conventional deterrence hangs on our ability to deploy and sustain our forces worldwide. As the largest users of this nation's strategic lift, we in the Army view strategic deployment from a total systems perspective.

General Bernard W. Rogers

Chief of Staff, Army

Message to Congress, January 1978¹

The Cold War, that period of "continual tense, alert peace" affected every aspect of U.S. force structure.² The end of that war consequently ushered in an environment marked by dramatic change. Bipolar global competition, once the driving force behind international relations, gave way to an evolving unstable geopolitical situation. As a result, U.S. forces have transitioned from a posture designed to defeat the Soviet Union to a posture characterized by a smaller overall force with fewer forward deployed forces and an orientation toward regional contingencies.

Since the end of the Cold War, the strategy for securing national interests has changed to include projection of force from the United States to various contingency areas. The Army, however, maintains the same type divisions for force projection that it had to meet the needs of the Cold War. This monograph examines the U.S. Army heavy division to determine if it is an appropriate force projection platform or simply a Cold War relic. Is a division, organized, equipped, and manned for sustained mid-intensity and high-intensity land combat against Soviet Forces in Europe, appropriate for use at the lower

end of the spectrum of conflict and in situations where the division is not already positioned for employment?

The monograph answers this question by first defining the strategic environment and the requirements for a heavy division. The heavy division's history, purpose and composition is examined next to determine if it can conduct the missions required of it. Locations of the divisions are essential factors that the monograph covers since locations of the divisions reflect directly on the availability of the division in contingency theaters. Finally, requirements for moving the heavy division using strategic airlift, sealift, and prepositioning ships are explored to assess the effort required to move one division into a theater of operations and the capacity of the United States to move and sustain the heavy divisions.

The strategic environment in 1945 required the United States to maintain ground forces in Europe to manage reconstruction under military governorship.³ This need gradually evolved to a requirement for ground forces in Europe to defeat Soviet forces threatening Western Europe. Throughout the next forty-five years, the United States Army adjusted the organization of these ground forces to satisfy requirements of this environment. The collapse of the Soviet Union as a superpower created a new strategic environment dramatically different from anything the United States had experienced since World War II. The bipolar nature of the world with communist countries and democratic

countries partly dissolved. In turn, this also dissolved the context of ideological superpower rivalry in which the United States tended to define conflicts.⁴ This changing environment appropriately created a shift in strategic focus. The need for a large force forward deployed in Europe diminished with the demise of the Soviet threat and introduced a strategic concept of projection of the nation's power from the continental United States to various crises.

The end of the Soviet ground threat to Western Europe and reductions in the Army's force structure since 1990 resulted in the Army's fighting strength shifting from forward deployed positions mostly in Western Europe to primarily in positions within the continental United States. In 1983, the Army's force in Europe consisted of four divisions, four separate brigades, two armored cavalry regiments, and a support structure designed to support two corps.⁵ Only 65,000 soldiers in a corps with two divisions remained in Europe by 1996.⁶ Accordingly, the Army can no longer rapidly shift major forces within Europe or from Europe to Africa or Asia as it did during OPERATION DESERT SHIELD in 1990 and 1991.⁷ "Overseas presence is a core competency of all the Services."⁸ However, this shift of forces to the United States and a smaller Army available to contingency planners increases the relative importance of force projection. A smaller force and different stationing are just two aspects of the Army effected by the end of the Cold War.

SECTION II

Strategic Environment

The United States recognizes that we have a special responsibility that goes along with being a great power and at times, our global interests and ideals lead us to oppose those who would endanger the survival or will of their peaceful neighbors.

President William J. Clinton
National Security Strategy
February 1996⁹

The Cold War affected every aspect of U.S. force structure.¹⁰ The collapse of the Soviet Union precipitated the end of this period and the subsequent downsizing of the United States Military. The Army shrank from eighteen active divisions in January 1990¹¹ to ten active divisions in 1996¹². The support structure also decreased in size to match the new base divisional force. As a result of the end of the Cold War, the size of the Army decreased and its stationing changed.

In 1990, four of the Army's heavy divisions were stationed in Germany with an additional brigade from each of two divisions stationed in the United States also positioned forward in Germany. Overall, seven Army divisions were stationed outside the continental United States. By 1996, only two divisions remained in Germany and each of them had only two brigades in Germany with the third brigade located in the center of the United States at Fort Riley, Kansas.¹³ The percentage of divisions deployed overseas remained the same which is deceptive because not only did the Army in Germany shrink by two divisions, it also gave up two separate brigades, two armored cavalry regiments,

and a corps headquarters and support command. Of course, the Army is not the only service to shrink in size while still being expected to deploy to secure the interests of the nation. Maritime and air services also protect and defend the nation's interests.

Maritime Forces consisting of Navy ships, aircraft, and shore support, as well as Marine Corps air and ground forces are deployed on a continuous basis with the equivalent of one carrier battle group and one Marine Expeditionary Unit in the Western Pacific, Mediterranean, and Indian Ocean regions. Some requirements might be met with a naval expeditionary task group with one or more aircraft carriers, amphibious ships with embarked Marines, surface combatant ships and submarines. Maritime Forces ensure the United States' use of the sea, provide peacetime overseas presence, and prompt crisis-response capabilities. All these missions translate into extensive deployment time with over fifty days at sea each quarter.¹⁴

Most of the Air Force's thirteen active fighter wings and 126 long-range bombers are based in the United States. Since much of the Air Force can now range around the world with aerial refueling, there is little need to permanently station many of its units overseas. In anticipation of a crisis, the wings can move to intermediate bases to gain response time. Even based in the United States, aviation forces are judged as likely to provide the nation's initial response in a major regional conflict because of the ease and speed with which they can be deployed.¹⁵

The Army's contribution to joint operations may come in small packages such as a Special Forces team of twelve men or as large as multiple corps as in OPERATION DESERT STORM. However, this monograph is concerned with the relevance of the Army heavy division in the current context of force projection from the United States. Two of the Army core competencies are mobile armored warfare and sustained land operations.¹⁶ Army heavy divisions provide these competencies and contribute to the joint battle normally operating as part of a corps, a joint task force, or a multinational force once they arrive in the theater. Getting to the theater has forced the Army, since 1898, into the joint domain simply because it cannot get to the fight on its own.¹⁷

The Army is dependent on both Maritime and Air Forces to move to the theater of operations. The United States' geographic isolation contributes to the security of the nation within its boundaries. That same isolation though, hinders the Army's response to threats outside its boundaries. The dependence of the Army on other services for deployment and sustainment is reinforced in the vision of the Secretary of Defense. He envisions early-deploying Army forces deploying by air, drawing equipment from prepositioned stocks, and preparing for the arrival of additional forces. These additional forces would arrive by sea (equipment) and air (personnel).¹⁸ The Army fully accepts this dependence and so is capable of operating jointly within the strategic context of engagement and enlargement.

President Clinton defined the strategic environment of the United States, not by its many dangers and challenges, but rather by a wide range of opportunities.¹⁹ These opportunities offer increased national safety and prosperity. Opportunities may exist to develop and support democratic governments, secure favorable trade agreements, reduce or counter emerging threats, and promote regional stability. The President intends to take advantage of these opportunities through a strategy of engagement and enlargement.²⁰

This strategy is built on three components that also shape the working environment for the heavy division. The three components are: (1) enhancement of national security through a strong defense and effective diplomacy; (2) opening of foreign markets to contribute to the global economy; and (3) promotion of democracy abroad.²¹

Engagement as a strategy refers to exercising global leadership as the world's premier economic and military power.²² This leadership must stress preventive diplomacy. The President outlined some areas that are especially important to the heavy division. He included overseas military presence and interaction between U.S. and foreign militaries as methods to help reduce the potential for crises.²³

The President uses enlargement to describe the U.S. involvement in expanding membership in the "world community of secure, democratic and free market nations."²⁴ Accomplishing this enlargement will require robust and flexible military forces. The variety of tasks the President envisions include deterring and defeating aggression in major

regional conflicts; providing credible overseas presence; countering weapons of mass destruction, terrorism, and drug trafficking; and contributing to multilateral peace operations.²⁵ These tasks require divisions that can quickly deploy, operate across the continuum of the range of military operations, and can operate as part of a joint and combined effort.

The National Military Strategy supports this concept as the military forces are directed to “Fight Combined and Fight Joint.”²⁶ U.S. Forces recognize that future actions will likely be conducted in concert with allies. Additionally, most operations will be conducted jointly with multiservice participation. Both of these environmental factors are considerations for the heavy division planning, training, and preparing for operations in support of one of the regional Commanders-in-Chief. Army divisions must be able to capitalize on the complementary contributions of the other services, to realize what the naval, air, space, and marine forces are doing in support of the operation.

Each service has its individual roles and functions. The Commission on Roles and Missions of the Armed Forces defined a place for the Army heavy division as it established as a core competency sustained armored combat.²⁷ This requirement validates the maintenance of heavy divisions in the force structure. What it does not address is if the Army needs to be able to rapidly deploy the heavy division. The Report of the Commission on Roles and Missions of the Armed Forces affirmed the Marine Corps’

function of rapid deployment and forced entry capability *as complementary* to the Army.²⁸

However the Army has a rapid deployment and forced entry capability in its light infantry and airborne divisions. The Army's requirement to rapidly deploy heavy forces is a force protection issue as well as an issue of deploying decisive force to prevent escalation of potential conflicts into hostilities and aggression against our allies.²⁹ This requirement is discussed in section III after a discussion of the heavy division's history, composition, and stationing.

SECTION III

The Heavy Division

So exasperating was its (90th Infantry Division) performance that at one point the First Army staff gave up and recommended that we break it up for replacements. Instead, we stayed with the division and in the end the 90th became one of the most outstanding in the European Theater. . . . Man for man one division is just as good as another - they vary only in the skill and leadership of their commanders.

General Omar N. Bradley
A Soldier's Story³⁰

History. Prior to World War I, the largest permanent tactical command in the Army was the regiment. Command and control aids such as the telephone were being integrated into Army operations During World War I. These aids allowed a wider span of control and a streamlining of command structures. Consequently, infantry divisions were formed by combining two regiments into brigades with two brigades subordinate to a division.³¹ Technological advancements such as the radio continued to allow further refinement to the division structure during the interlude between World War I and World War II.

The division was further streamlined during World War II by eliminating the brigade headquarters leaving three regiments directly under the control of the division. Heavy divisions were first formed in World War II and, following the triangular structure of the infantry divisions, had three regiments under division control. During the war, the

three regiments were replaced with combat commands, each with tank and armored infantry battalions.³²

The Army that won World War II, designed to defeat the Germans, was then employed along the new front with the Soviets. For the immediate years following World War II, this force was sufficient for the deterrence mission assigned it. Changing environments, though, would require a changed force.

Dwight Eisenhower's accession to the Presidency in 1953 introduced a strategy called "The New Look." The New Look was a strategy of massive retaliation to any enemy use of nuclear weapons. This strategy ensured fiscally lean times for the Army as more funds were committed to building a massive nuclear force.³³ The prospect of a nuclear battlefield combined with the need to do more with less led to a reorganization of the Army divisions. The new divisional structure was called the Pentomic Division and was based on layers of five - five platoons per company, five companies per battle group, and five battle groups in the division.³⁴

A new military strategy was introduced in 1961 as President Kennedy entered office. The new strategy was drafted by General Maxwell Taylor and named "Flexible Response"³⁵ based on its graduated response to security threats. This strategy ushered in wholesale abandonment of the Pentomic concept and was accompanied by a quest for light formations and a new division structure referred to as the ROAD Division

(Reorganization Objectives Army Division).³⁶ Combat commands were renamed brigades and each division received three of these brigades. By the end of the Vietnam War in the mid-1970s, a new doctrine was entering the field that would change the nature of employment of the ROAD divisions. The doctrine of "Active Defense" was meant to fight and win in Europe against a numerically superior Soviet Union. The end of the 1980s saw the emergence of "Air-land Battle" as the Army's watchword as the Active Defense passed from favor. "Division 86" was a modernization program that came on the scene with Air-Land Battle and kept the three brigades in the division, but gave the heavy divisions a tenth ground maneuver battalion.³⁷

The Army maintained its triangular formations except for the brief time it adopted the Pentomic concept with its basis of five units at each level. Each of the various strategies required a new mental approach to operating on the battlefield but involved very little actual modification to unit structure that was evident to individual soldiers. The triangular formation with three platoons per company, three companies per battalion (changed to four in the armor and mechanized infantry battalions in the mid-1980s), three battalions per brigade, and three brigades in each division eased command and control because of the reduced span of control.

However, a division commander in a division of three brigades does not just have three brigades to control. He must also direct the activities of an aviation brigade, a

division support command, the division artillery, and other separately assigned and attached units. Because of all these extra units, it is important to keep the number of maneuver units as small as possible while maintaining enough force to accomplish assigned missions. Each unit requires space to operate in and the addition of units onto the battlefield complicates the integration process necessary to maximize the contributions of each. The triangular formation simplifies command and control links. Certainly, during the latter years of the Cold War, with an increased emphasis on high tempo during operations, simple organizations that facilitated command and control were essential.

Focus on high tempo during operations came to fruition during OPERATION DESERT STORM in 1991. The Army deployed seven divisions into Saudi Arabia, five heavy divisions, the airborne division, and the air assault division. The Marines also had two divisions in Saudi Arabia for the operation.³⁸ The Marines' rapid attack into Kuwait February 24 - 26, 1991 caused the timetable for the Army attack to move forward a day.³⁹ Fast-paced Army operations caused problems for command and control as the U.S. VII Corps closed against Iraqi Republican Guard divisions.⁴⁰ The rapid nature of combat in the heavy divisions produced an increased likelihood of fratricide which halted night operations in VII Corps even though the Corps was equipped with thermal sighting systems for night operations.⁴¹ The divisions were able to move cross-country at up to thirty miles an hour.⁴²

Composition. The current division structure remains generally unchanged from the divisions that fought DESERT STORM. The number of people and pieces of equipment in the division is prescribed by the Table of Organization and Allowances (TOE). The mechanized infantry division's TOE (TOE 87000A200)⁴³ lists requirements for 1691 tracked vehicles and 4041 wheeled vehicles.⁴⁴ These vehicles, along with over 1400 trailers, are capable of moving the division's equipment and its nearly 18,000 soldiers. However, the presence of large numbers of vehicles that enable tactical mobility, creates some difficulties in strategic mobility. These difficulties are addressed in a later section but even a cursory glance reveals the task of moving the division based solely on its size.

The basic fighting element around which the division is organized is the armored and mechanized infantry battalion. Both armored and mechanized infantry battalions are found in each of the two types of heavy division. The chief difference lies in the number of armored and mechanized infantry battalions each has. The support structure of each division is similar with modifications in quantities of various support systems made to suit the number of maneuver battalions within each division.

The mechanized infantry division is organized by its TOE into four armor battalions, five mechanized infantry battalions, and two attack helicopter battalions, all undergirded with a substantial support and command and control structure. Armor and mechanized infantry battalions fight under the control of three ground maneuver brigades. A

Headquarters Company is the only organic element assigned to the brigade. All other elements, including the armor and mechanized infantry battalions are simply attached to the brigade based on mission needs. The two attack helicopter battalions are in the aviation brigade along with a cavalry squadron and assault helicopter battalion.

Supporting elements within the division are divided into two categories - combat support and combat service support.

Combat support elements include an engineer brigade of three engineer battalions, the division artillery with three 155 millimeter cannon artillery battalions (52 total cannons) and a battery of Multiple Launch Rocket Systems (MLRS) with nine launchers, and an air defense battalion equipped with Avengers and Bradley Stinger Fighting Vehicles. These supporting arms are seldom kept as a single unit but are divided up to support the ground maneuver brigades as the mission requires. Combat service support elements are also allocated to support the division based on the mission.

Combat service support elements include a signal battalion, a military intelligence battalion, a chemical company, a battalion of military police, and the division support command. Each maneuver brigade can receive portions of each of these various units based on mission requirements. Typically, a ground maneuver brigade receives a signal company to provide communications support over the extended distances the brigade will operate, a military intelligence company with some capability to identify moving enemy

systems with ground surveillance radars and to jam radio transmissions, a chemical platoon that may have chemical reconnaissance capability, decontamination capability, or smoke producing capability, a platoon of military police that can be employed to facilitate traffic control and management or to aid in prisoner control, and a forward support battalion that supports elements of the brigade with various classes of supply. Ultimately, these units provide assets to the maneuver brigade as needed and can be augmented by the corps or even echelons above corps.

The heavy division has a robust command and control structure that allows the commander to monitor the activities of all his subordinate units and to control their activities. Through the command and control system, the division commander prioritizes and allocates assets to employ and sustain combat power. To accomplish this, the division exercises command and control through the command group and three command post facilities, the division tactical command post, division main command post, and the division rear command post.⁴⁵ Of these four, the command group is the most flexible.

The command group consists of the division commander and those members of his staff whom he designates. The organization of the command group may be adjusted based on the needs of the commander for a particular mission. The command group is a small organization and highly mobile so that it can move about the battlefield, allowing the commander to position himself where he can best influence the battle.

The tactical command post is normally located in the main battle area to control the close operations of the division, those engagements by the brigades that ultimately determine the outcome of the division battle.⁴⁶ To aid the division commander in the control of the close operation, the assistant division commander for maneuver normally operates out of the tactical command post and supervises its operations. Its primary functions are combat intelligence, control of maneuver forces, control and coordination of immediate fire support means, coordination of airspace, forward air defense operations, and maintaining changes to the current close operations situation; all provided by the minimum necessary staff support.⁴⁷ The tactical command post must remain small and mobile to allow it to keep up with the maneuver forces it is controlling.

The division main command post coordinates the activities of the division throughout the depth of the battlefield. It controls the close operations while the tactical command post is displacing to new locations, controls division deep operations, and coordinates requirements for rear area protection. The division main command post is the focal point within the division of all-source intelligence and for future planning. The division operations officer, normally operating in the division main command post, allocates terrain to divisional and non-divisional units within the division's area of operations.

Coordination of the sustainment effort of the division also takes place in the division main

command post although detailed combat service support plans are developed in the division support command post.

The division rear command post locates in the division support area collocated with the division support command (DISCOM) command post. It is responsible for rear operations although it monitors actions forward and is prepared to assume control of the fight in the event the tactical command post and the division main command post can no longer function.

Location. U.S. heavy divisions are stationed within the continental United States as well as in Germany.⁴⁸ Heavy divisions in the United States are located in the southern part of the United States, east of the Rocky Mountains. The 4th Mechanized Infantry Division and the 1st Cavalry Division are located at Fort Hood, Texas while the 3rd Mechanized Infantry Division is stationed at Fort Stewart, Georgia.⁴⁹ Additionally, three brigades, one from each of the divisions stationed in Germany and one brigade from the 2nd Infantry Division in Korea are stationed in the United States at Fort Riley, Kansas and at Fort Lewis, Washington. Fort Hood divisions are 195 miles from Houston, the nearest port facility. The 3rd Division at Fort Stewart is only 41 miles from the port at Savannah, Georgia. Brigades stationed at Fort Riley must travel at least 725 miles to a port (Houston, Texas).⁵⁰ The heavy brigade assigned to the 2nd Infantry Division but stationed at Fort Lewis, Washington is only 15 miles from the port at Tacoma but generally, Pacific

deployments involve significantly longer distances from the installation to the port. For example, units leaving Fort Hood would have to travel 1,719 miles to get to the nearest port on the west coast.

The Army also has two divisions in Germany assigned to the V (US) Corps. 1st Mechanized Infantry Division is headquartered in Wurzburg and 1st Armored Division is headquartered in Bad Kreuznach.⁵¹ Subordinate units of the two divisions are distributed among various installations in Germany except for the one brigade each has at Fort Riley, Kansas. Both divisions require overland movement to a European port for intertheater deployment, a movement that took 1st Armored Division nearly three weeks to complete in 1990 during deployment to Saudi Arabia for OPERATION DESERT STORM. The division required 210 trains and 187 wheeled convoys to move to the ports of Bremerhaven (Germany), Rotterdam (Netherlands), and Antwerp (Netherlands).

Force Requirements for the Heavy Division. The heavy division's purpose is to provide mobile, armor-protected firepower.⁵² It is also meant to be complementary to the light infantry, airborne, and air assault divisions which all have their own unique capabilities. Capabilities that the heavy division provides to the theater commander are tactical mobility, survivability, tremendous shock value, and massive firepower. It destroys enemy armored forces, penetrates and envelopes enemy defenses, and rapidly concentrates to defeat enemy offensives. The division's organization and organic

equipment are the dominant contributors to its tactical mobility and potential for superior firepower.

All these capabilities are focused on meeting the needs of the regional Commanders-in-Chief. The regional Commanders-in-Chief, the combatant commanders, require forces capable of providing decisive force on potential battlefields.⁵³ Forces must also be capable of accomplishing various types of missions, sometimes simultaneously, and on various types of terrain. Finally, these trained and ready forces must be capable of rapid response to emerging situations.

Determining if a force is of the right size and composition to be decisive in a given situation is difficult to measure until after the event. A division deployed to deter further aggression cannot be judged successful or unsuccessful until the adversary halts attempts at aggression or escalates the aggression into armed conflict. Likewise, divisions employed in combat cannot be ultimately judged decisive until the point of decision in the conflict is reached. In spite of these difficulties, though, there are some indicators that aid in the assessment of a force's decisive potential.

The first indicator is the degree to which the opposing nations agree on their relative military strengths and the ability to apply that strength efficiently.⁵⁴ Geoffrey Blainey, an Australian professor of economic history in Melbourne and a professor of Australian Studies at Harvard, presents the idea that without agreement on their relative strength, a

nation attempting to deter war or continued aggression will fail because the aggressor nation perceives an advantage on his part. There must be agreement between the two nations on their relative strength for the conflict to be averted. This agreement may be based on either fact or perceptions of what is real. A force deployed to deter conflict, then, must not only be able to overwhelm the enemy but be physically robust enough to appear to be able to overwhelm the enemy.

Another indicator of decisiveness is readiness to respond and meet deployment requirements.⁵⁵ Readiness means that forces are manned, equipped, trained, and sufficiently sustainable to accomplish assigned missions.⁵⁶ Ready forces are able to fight and win the nation's wars as well as execute other elements of the National Security Strategy.⁵⁷ Unless a high degree of readiness exists, it may be difficult to convince would-be adversaries that the United States can employ decisive force.

A final indicator that a deployed force can be decisive in its operations is that force protection measures are being successful. Protection is an element of combat power and conserves the fighting potential of the force by preventing the enemy from gaining unexpected advantage, maintaining the health and morale of the soldiers, lessening risks to soldiers through safe procedures, and instituting and enforcing measures to prevent fratricide.⁵⁸ Full-dimensional protection depends on control of the battlespace and allows friendly forces freedom of action.⁵⁹

In addition to employing decisive force in combat operations, deploying forces must also be able to conduct a variety of missions. Not only must they be able to deter and defeat aggression in major regional conflicts, they must be able to contribute to multilateral peace operations, support counter-terrorism efforts, fight drug trafficking, and help achieve other national security objectives.⁶⁰ The heavy division must rapidly and efficiently shift focus, tailor its forces, and move from one role to another, sometimes with little preparation time. To accomplish this, the division needs the lethality to conduct sustained combat operations and the manpower and logistics structure to conduct nation assistance and peace operations. The environments faced by forces in combat and those conducting operations other than war present unique problems that must be met in different ways. For instance, the division at war will rely on crewed weapons - tanks, infantry fighting vehicles, artillery pieces, and armed helicopters - to accomplish its assigned mission while divisions conducting missions other than combat may rely more on dismounted soldiers, construction engineers, facility managers, water purification specialists, or other support personnel. MG John Keane stated in April 1995 that:

You need close battle forces (foot infantry) to control populations; you need them to control facilities; you need them to take ownership of ground as you process yourself into a country because that is going to drive you to the center of gravity; that is going to drive you to the war termination event; that is going to drive you to victory.⁶¹

1st Armored Division formed the core of the United States contingent of the Implementation Force (Task Force Eagle) and deployed to Bosnia as part of Operation Joint Endeavor (a result of the November 1995 Dayton Peace Agreement). This mission involved about 23,000 soldiers.⁶² Deploying these soldiers and the division's equipment (less one brigade stationed at Fort Riley, Kansas) required 373 trains, 1,408 cargo plane sorties, and 2,047 transport vehicles.⁶³ Sustainment requires three convoys and twelve air sorties to provide 75,000 meals, 192,000 gallons of water, 130,000 gallons of fuel, and 133 short tons of other supplies.⁶⁴ Task Force Eagle operated out of 24 base camps and operated observation points, checkpoints, conducts patrols, and other missions necessary to ensure compliance with the terms of the Dayton accord.⁶⁵

1st Armored Division's deployment was an example of a heavy division operating in an environment requiring large numbers of dismounted soldiers. Each checkpoint, dismounted patrol, or Listening Post/Observation Post (LP/OP) that the division operated required at least twelve soldiers.⁶⁶ Since a brigade could receive up to fifty missions each day,⁶⁷ its soldiers could easily be used up on a single shift.⁶⁸ The Area of Operations for one of the brigades of Task Force Eagle included eleven Checkpoints and four Observation Posts.⁶⁹ These fifteen posts required at least twelve soldiers each or 180 soldiers for just one shift. The brigade could man these posts with two shifts and have eight squads remaining for other missions (security, patrols, etc.) if each platoon was filled

to its authorized levels. One brigade commander reported that the troop to task analysis for his sector was fifty-four platoons, much more than the thirty-six he had (including all the tank platoons).⁷⁰ Operations other than war may require large numbers of dismounted soldiers, soldiers the heavy division may not have.

The division may also find itself in need of a reinforced combat support and combat service support structure for moving and distributing supplies and supporting regions or cities of a host country. Whatever the need for additional support in these areas, the division will have to draw from its higher headquarters in order to tailor the force to the particular situation. The heavy division can accomplish various tasks across the range of military operations but only if properly augmented with additional, specialized forces any time it is operating outside its primary role of mobile warfare and against armies employing modern tanks and armored fighting vehicles.⁷¹

The heavy division is also required to be able to operate on various types of terrain although it is best suited to open terrain where it is afforded long-range and flat-trajectory fire and where it can best use its mobility.⁷² It experiences restricted mobility in jungles, dense forests, steep and rugged terrain, built-up areas and in the vicinity of water obstacles. Difficulties do not exempt the division from planning for and training for operations in built-up areas (Europe) or in steep and rugged terrain (Korea).

Finally, Combatant Commanders require forces capable of rapid response to potential crisis.⁷³ A force stationed in the United States and deployed to points of crisis is a cost-effective substitute for in-place force capabilities.⁷⁴ It makes little difference what capabilities a unit has if it cannot get to a point of crisis in a timely manner. This response for the heavy division can be measured in three areas: time required from moment of notification to staging at the port prepared to load on transport vessels; time required to load available transport and move to the theater of operations; and ability to sustain the force once it arrives. All three of these points in the deployment process are important links in the strategic deployability of all Army forces and all three are necessarily tied to the efficiencies of other services to allow success for the Army.

SECTION IV

Strategically Moving the Heavy Division

In an era when threats may emerge with little or no warning, our ability to defend our interests will depend on our speed and our agility. And we will need forces that give us a global reach. No amount of political change will alter the geographic fact that we are separated from many of our most important allies and interests by thousands of miles of water. . . We'll have to have air and sealift capacities to get our forces where they are needed, when they are needed. A new emphasis on flexibility and versatility must guide our efforts.

President George Bush

The Aspen Institute, 2 August 1990⁷⁵

Moving forces to the conflict is not a new problem for the United States Army.

During the efforts of 1898 to secure the independence of Cuba from Spain, the Army had to move from its camps to Tampa, Florida then to Santiago, Cuba. Chaos reigned the night prior to the force sailing from Port Tampa because the troops knew the transportation system was not adequate to move the entire force to the port. The soldiers took it upon themselves to get to the port by whatever means they could secure. Chaos was still the order of the day once they arrived at Port Tampa. The thirty-eight ships assembled at Port Tampa to move the expeditionary force to Cuba were inadequate to move the expeditionary force and its supplies. The lack of sufficient transportation influenced much of the Cuban campaign, whether in damaging the army's confidence by not having sufficient lift to move them to the battle zone, or in generally reducing the

army's confidence and morale in the area of operations by being unable to properly supply the advance toward Santiago.⁷⁶

Although the issue of moving forces into a theater of operations is not new to the Army, it is still an issue that the Army has not resolved satisfactorily. Part of the problem today is the size of the force to be moved. The heavy division's equipment takes up over one and one-half million square feet and weighs in at about 108,000 short tons.⁷⁷ This incredible bulk and weight is sure to test any deployment system, no matter how well balanced it may be.

Ian O. Lesser, a 1986 doctoral student at St. Antony's College in Oxford, wrote in the March 1986 issue of the Journal of the Royal United Services Institute for Defence Studies about "The Mobility Triad,"⁷⁸ which he identified as airlift, sealift, and pre-positioning. United States Transportation Command lists four "Pillars of Strategic Mobility": land, air, sea, and pre-positioning.⁷⁹ The geographic isolation of the United States lessens the impact of land deployment in relation to the other three elements of mobility. Therefore, the remainder of this section will concentrate on airlift, sealift, and pre-positioning.

There is great difficulty in maintaining a balance between airlift, sealift, and pre-positioning. Part of this difficulty stems from the various types of forces that may need to be deployed while some of the difficulty is a product of the various assets available at

different times to move the units. The contribution of each element of the mobility triad to moving and sustaining the heavy division is the focus of this section of the paper.

Airlift. The first element of the triad that Lesser discusses is Airlift. There is little relevance in a discussion of deploying the heavy division by air alone because the number of airframes required is prohibitive. The current heavy division requires over 1,700 C-141 and over 1,200 C-17 to deploy by air. The total number of aircraft required changes very little when using C-5 aircraft instead of the C-17 - 1,900 C-141 and 900 C-5.⁸⁰ These requirements are prohibitive because there are only about 70 C-5, 210 C-141, and 40 C-17 in the current inventory with 102 C-17 due on line by 2001.⁸¹

Aircraft in the inventory do not always equate to aircraft available for missions. There are competing commitments, maintenance down-times, required repairs, and so on. If all the aircraft could surge to meet deployment requirements for one heavy division, each aircraft would still need to fly at least 10 round-trips to move one division. A more likely and more useful scenario to consider is the use of aircraft to deploy some equipment and all the personnel of the division while the vehicles and heavy equipment deploy by ship.

Sealift. The heavy division can maximize the benefits of sealift (great quantities of material moved in single lifts), pre-positioning, and airlift (rapid transport of personnel and small loads of equipment) by deploying by multiple means. The mix of transportation

means depends primarily on availability of suitable assets. Lesser addressed the "history of neglect" that plagues the United States deployment capability.⁸² He attributed this neglect in part to the expensive nature of mobility systems, the Army's reliance on the Air Force and the Navy, both of whom have priorities that do not emphasize mobility. This neglect not only applies to airframes as shown in the previous paragraph but also to strategic sealift.

Strategic sealift is a term that encompasses a complicated system of ocean going cargo vessels used by the United States to conduct strategic deployment. Some of these vessels belong to the Navy, some are contracted to the U.S. Government, some are in a reserve fleet, and some are commercial vessels that the government has access to in a national emergency. It is no surprise, based on the wide range of sources of sealift, that there is a wide variety of vessels available to move Army forces to a theater of operations.

The preferred vessel for transporting the heavy equipment of a heavy division is the Fast Sealift Ship because of its relatively fast transit time. It is also preferred because it is a Roll-on/Roll-off (RORO) ship on which a series of external and internal ramps speed loading and unloading of vehicles and cargo. In spite of its apparent advantages, the United States only has eight of these Fast Sealift Ships in the inventory. Shortfalls in hauling capacity of the Fast Sealift Ships are made up by Large Medium-Speed RORO ships which allow rapid loading and offloading but require longer transit times. Speed

ranges from eighteen to twenty-four knots for Breakbulk ships, Container ships, and Large Medium-Speed RORO ships while Fast Sealift Ships travel at twenty-seven knots. This difference does not appear to be substantial but even a difference of three knots during movement to the Middle East could result in a difference of over three days sailing time.⁸³

Transit times are one element of the total time required to deploy by sea. Added to transit times are loading and unloading times. RORO ships can be loaded in three days and unloaded in two. Depending on the cargo, Breakbulk/Container ships can be loaded in four days and unloaded in three. Average shiploading and unloading times for moving ammunition to DESERT STORM aboard Breakbulk/Container ships was nine days to load and eight days to unload.⁸⁴ A few days difference in transit time added to longer loading and unloading times could result in forcing the Regional Commander-in-Chief to modify his plan.

Heavy divisions require from four to eight Fast Sealift Ships and up to two Large Medium-Speed RORO ships to move their equipment depending on how they configure their equipment. If the division moves by Breakbulk ships, it needs up to thirty-two ships to move its equipment.⁸⁵ 1st Armored Division deployed from Europe in December 1990 aboard forty-four ships (equipment) and 124 planes (personnel) to participate in OPERATION DESERT SHIELD.⁸⁶ Just because the division should fit by weight and cube onto thirty-two ships does not mean that only thirty-two ships will be required for

deployment. Perhaps other cargo is carried in the ship or other units are deploying as part of the deployment package and those elements are also on the "division's" ships.

Whatever the causes, the division will require a significant number of ships to move its equipment into a theater of operations. In some cases this option of deploying the division may be as prohibitive as deploying by air but in this case it is because of time. The movements planner may be left looking for a different way.

Pre-positioning. The third leg of the mobility triad is pre-positioning. Most soldiers are familiar with the pre-positioning of material configured to unit sets (POMCUS) that was a cornerstone of the European theater of operations during the Cold War. The idea was that units could train on one set of equipment in the United States then quickly deploy and receive an identical set of equipment with which to fight in Europe. Ground based pre-positioning worked well for the time and purpose for which it was intended. Lessor identifies several problems associated with this concept that make it unsuitable for the current environment.⁸⁷

Ground based pre-positioning allows for rapid deployment by the heavy division but it is very expensive. Each division set of equipment is essentially a duplicate because the divisions require a set at home station on which they can train as well as the set in the POMCUS site. Strategic flexibility is also an issue since the POMCUS equipment may not be in the same area of the crises. It could be that even if we could anticipate the next

crisis, it may be impossible to pre-position ashore due to political considerations or to the stability of the local government and the subsequent assurance of access to the equipment in a period of crisis. Finally, ground-based POMCUS sites, are high value targets and are especially vulnerable due to their stationary nature.⁸⁸ A possible solution to the difficulties of land-based pre-positioning is to position the equipment aboard ships.

Ship-based pre-positioning is becoming a predominant fixture of the third leg of the mobility triad. Ship based pre-positioning will allow the United States to have the weapon systems of a heavy division near crisis areas without the political entanglements involved when trying to permanently house military equipment in a host nation. Pre-positioning equipment afloat will not eliminate the cost of purchasing and maintaining two sets of equipment. However, the equipment will be more readily available where the Regional Commander-in-Chief needs it.⁸⁹

Equipment pre-positioned afloat includes more than just Army combat vehicles. The heavy division requires a considerable logistics base to keep it moving. The thirteen pre-positioning ships in the Afloat Pre-Positioning Force⁹⁰ (Thirteen pre-positioning ships and thirteen ships in the Maritime Pre-Positioning Forces that support Marine Expeditionary Forces) carry a brigade's equipment and supplies to sustain elements of a corps until lines of communication are established.⁹¹ Four of the pre-positioning ships are tankers and the

remainder are cargo ships. Employing a heavy division requires careful consideration of theater capabilities to sustain that division.

Sustainment requirements are enormous. One heavy division requires over 516,804 gallons of fuel each day with 246,000 gallons going to the armor battalions.⁹² Fuel requirements of this magnitude can only be met through ships or pipeline operations; airlift is not a practical means to provide fuel to the heavy division. If conducting combat operations, the division prioritizes the flow of ammunition throughout the division. Ammunition is a high tonnage item and must be transported and stored using special procedures. The division can consume about 2400 tons of ammunition per day.⁹³ These sustainment requirements are the reason that four of the thirteen ships are fuel tankers and why only one brigade's worth of equipment is carried on the other nine ships since the supply needs of the heavy forces are so great.

Pre-positioning ships in their pre-positioning role delivered 116,977 tons to the Persian Gulf Area of Responsibility during OPERATION DESERT SHIELD.⁹⁴ Pre-positioning ships, serving in both their pre-positioning role and in a common-user role, provided eight and one-half percent of Desert Shield/Desert Storm unit cargo.⁹⁵ Significantly, these ships arrived in the Area of Responsibility ten days prior to any Fast Sealift Ships moving from the U.S. East Coast.⁹⁶

Although ship-based pre-positioned equipment will help get some force into theater quickly, Regional Commanders-in-Chief will still rely on sealift to move heavy forces into their respective theaters. There simply are not enough pre-positioning ships available to have complete divisional sets of equipment sailing around ready to respond to the next crisis. Ultimately, units can maximize the benefits of the three methods of deploying using multiple means, the lift capacity of sealift, speed of airlift, and proximity of the pre-positioning ships.

SECTION V

Conclusion

The structure of Army and Marine forces reflects the diverse operations they might be called upon to perform. Major regional conflicts pose the most significant potential demands, and thus drive force requirements The forces required for peace operations and smaller-scale operations normally are subsumed within those needed for major regional conflicts.

William J. Perry
Secretary of Defense
February 1995⁹⁷

The end of the Cold War marked the beginning of a period characterized by dramatic change. Evolving geopolitical relationships are shaping international relations, a sharp break from the stable bipolar global competition that once defined the boundaries within which the United States decided its policy. The resultant transition to a force projection Army directly reflects this environmental change, a change that also reduced overall force size, fewer forward deployed forces, and an orientation toward regional contingencies.

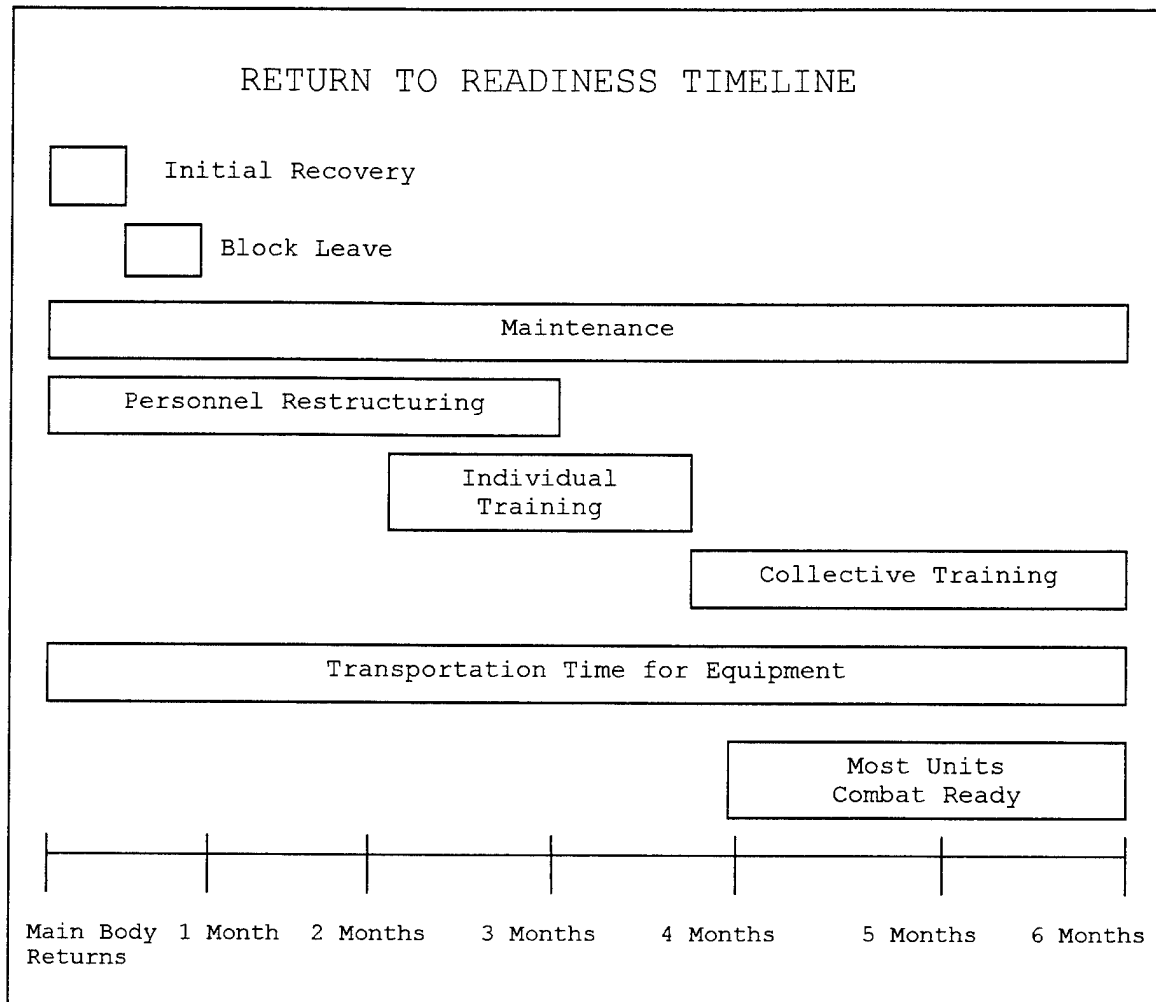
In spite of broad strategic changes, the Army maintains the same type divisions for force projection that it had to meet the needs of the Cold War. Two recent operations involving Army heavy divisions demonstrate that the heavy division is capable of much more than its designed purpose. It is not restricted to fighting from forward deployed positions against highly mobile, highly lethal, armored forces but can conduct a variety of missions in locales that tax strategic lift assets.

The deployment to Saudi Arabia for OPERATION DESERT SHIELD/STORM involved five Army heavy divisions and an associated support structure for two corps.⁹⁸ The deployment, which involved all services, ranks among the largest in history.⁹⁹ Once deployed, the speed and lethality of the divisions contributed to the rapid conclusion of the war. Without continuous sealift and airlift providing sustainment for this potentially lethal force, the many successes of Desert Storm could not have been gained on the same timeline executed in 1991. Sealift and airlift were also necessary for redeployment although time was not a critical factor. If another conflict had required forces from the Persian Gulf immediately after Desert Storm, scheduling airlift and sealift assets for sustainment to both theaters, deployment of forces from the Persian Gulf to the new theater, and redeployment of the remaining forces to the United States could have been an overwhelming challenge.

1st Armored Division's deployment to Bosnia, though in the same theater as where it is stationed, required a substantial amount of lift assets to complete the move and then sustain its operations. However, it did complete its move, and was successful in its role as the Implementation Force, a non-traditional role for an armored division.

Success in peace operations comes with associated costs in combat readiness. The negative effect on combat readiness is so significant that the Center for Army Lessons Learned at Fort Leavenworth proposed that the Department of the Army provide

guidance covering unit status reporting for units that deploy to peace operations.¹⁰⁰ Units returning from peace operations should expect a four to six month period of returning to normal readiness as shown in this Return to Readiness Timeline:¹⁰¹



One detriment to readiness is the constant personnel turnover. Crew stability will be a problem for any unit on a year long deployment.¹⁰² One mechanized infantry

company changed thirteen of its fourteen crews during its deployment to Bosnia.¹⁰³ This is significant since one of the most degradable skills in any unit is marksmanship and gunnery.¹⁰⁴ The natural decline of gunnery skills coupled with a shuffling of crews reduces the effectiveness of a short gunnery period.¹⁰⁵ 1st Armored Division accomplished its mission but not without some degradation in combat readiness.

These two examples indicate that the heavy division currently remains a viable element of the Army force structure. The role of the division for the future is an issue not so readily resolved. International situations will continue to demand a capability that includes superior weaponry and a superior ability to concentrate supporting efforts at the decisive time and place.¹⁰⁶ Threats will range from standing armies employing mixes of old and modern weapons systems to irregular forces employing modern light arms in a fighting style unconstrained by laws or ethical codes.¹⁰⁷ These possible threats create a need for forces that can produce decisive combat power, are capable of accomplishing multiple missions on various types of terrain, and can provide rapid response.

Both the Gulf War and Bosnian deployments demonstrated the decisive potential of the heavy division. In both cases, the U.S. heavy division overwhelmed its adversaries. As the division continues to upgrade its weapon systems, it will likely continue to maintain the same capability to provide the commander with decisive potential. Not all missions will require decisive combat operations by lethal, protected forces.

1st Armored Division's capacity to wage decisive combat contributed to the success of the Implementation Force but the combatant commander needed a force that could successfully accomplish other tasks besides standard tactical tasks. Through a series of deliberate steps including participation in Operation Able Sentry (Macedonia-December 1994-May 1995), a Partnership for Peace exercise (Czechoslovakia-August 1995), and mission specific training in local training areas and the Combat Maneuver Training Center, 1st Armored Division transitioned from a warfighting mindset to a peacekeeping mindset. It was able to do so in terrain much different than what soldiers experienced in Saudi Arabia or on the plains of Germany. The heavy division is a versatile force, able to work across the range of military operations that planners deal with. The major obstacles for the commander wanting to employ the heavy division is the actual deployment and sustainment once it is in theater.

Strategic airlift, sealift, and prepositioning ships working in concert present tremendous capability. In seven months, United States Transportation Command moved nearly 504,000 passengers, 3.6 million tons of dry cargo, and 6.1 million tons of petroleum products.¹⁰⁸ The heavy division does not deploy rapidly which indicates a need for advance notice that allows time for preparation for the move. Enhancements of the sealift fleet and expansion of the prepositioning shipping fleet could improve responsiveness but combatant commanders should not depend on the heavy division for actions in the first

week after it is alerted. Every plan must consider required movement time for the division get into theater.

The U.S. Army heavy division, organized, equipped, and manned for sustained mid-intensity and high-intensity land combat against Soviet Forces in Europe, remains appropriate for use across the spectrum of conflict and in situations where the division is not already positioned for employment. Physical mass still counts in combat operations and in operations aimed at preventing war from starting, spreading, or escalating.¹⁰⁹ The heavy division provides needed mass. Considerable effort is required to deploy and sustain the division, but its advanced weapon systems and command and control systems make it a valuable tool in the strategic setting of force projection.

NOTES

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- ² U.S. Congress, Office of Technology Assessment, American Military Power: Future Needs, Future Choices - Background Paper, (Washington, DC: U.S. Government Printing Office, October 1991), p. 2-3.
- ³ Carl J. Friedrich, American Experiences in Military Government in World War II, (New York: Rinehart & Company, 1948), p. 4.
- ⁴ U.S. Congress, Office of Technology Assessment, American Military Power: Future Needs, Future Choices - Background Paper, p. 1.
- ⁵ Russell F. Weigley, History of the United States Army, (Bloomington: Indiana University Press, 1984), p. 575.
- ⁶ General William W. Crouch, "Forward Deployed and Projecting Power," in Army Green Book, (Arlington, VA: Association of the United States Army, October 1996), p. 69, 205.
- ⁷ Lieutenant General William G. Pagonis, Moving Mountains, (Boston: Harvard Business School Press, 1992), p. 126.
- ⁸ Department of Defense Commission on Roles and Missions of the Armed Forces, Directions for Defense: Report of the Commission on Roles and Missions of the Armed Forces, (Washington, DC: U.S. Government Printing Office, May 1995), p. ES-5.
- ⁹ President William J. Clinton, A National Security Strategy of Engagement and Enlargement, (Washington, DC: U.S. Government Printing Office, February 1996), p. iii.
- ¹⁰ U.S. Congress, Office of Technology Assessment, American Military Power: Future Needs, Future Choices - Background Paper, p. 2-3.
- ¹¹ Dick Cheney, Secretary of Defense, Annual Report to the President and Congress, (Washington, DC: U.S. Government Printing Office, January 1990), p. 37.
- ¹² "Command and Staff List", in Army Green Book, pp. 191 - 206.
- ¹³ Ibid., p. 205.

¹⁴ William J. Perry, Secretary of Defense, Annual Report to the President and Congress, (Washington, DC: U.S. Government Printing Office, February 1995), p. 187.

¹⁵ Perry, Annual Report to the President and Congress, pp. 197 - 211.

¹⁶ Department of Defense Commission on Roles and Missions of the Armed Forces, Directions for Defense: Report of the Commission on Roles and Missions of the Armed Forces, pp. 2-20, 2-28.

¹⁷ Daniel P. Bolger, "A Power Projection Force: Some Concrete Proposals," in Parameters, (Winter 1992-93), p. 49.

¹⁸ Perry, Annual Report to the President and Congress, p. 218.

¹⁹ Clinton, A National Security Strategy of Engagement and Enlargement, p. i.

²⁰ Ibid., pp. 1 - 3.

²¹ Ibid., p. 3.

²² Ibid., p. 11.

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid., p. 13.

²⁶ National Military Strategy of the United States of America, (Washington, DC: U.S. Government Printing Office, 1995), p. 13.

²⁷ Department of Defense Commission on Roles and Missions of the Armed Forces, Directions for Defense: Report of the Commission on Roles and Missions of the Armed Forces, p. 2-29.

²⁸ Ibid., pp. 2-28 - 2-30.

²⁹ National Military Strategy of the United States of America, p. 9.

³⁰ General Omar N. Bradley, A Soldier's Story, (New York: Henry Holt and Company, Inc., 1951) p. 297.

³¹ United States Army, Field Manual 71-100 Division Operations, (Washington, DC: Department of the Army, June 1990) p. 1-2.

³² Ibid.

³³ Colonel (Ret) A.J. Bacevich, The Pentomic Era, (Washington, DC: National Defense University Press, 1986), pp. 15-18. To demonstrate the relative shrinking of the Army budget in relation to strategic nuclear forces, Colonel Bacevich gives figures for the budgets on pages 16 and 17 that show the Air Force budget swelling to twice that of the Army in just two years. In that time, the Army budget shrank by nearly fifty percent.

³⁴ Ibid., p. 5.

³⁵ Ibid., p. 48.

³⁶ Brigadier General (Ret) John C. Bahnsen, Jr., "The Kaleidoscopic US Army," in Armed Forces Journal International, (November 1985), pp. 79-82.

³⁷ Stuart L. Perkins, Global Demands: Limited Forces, (Washington, DC: National Defense University Press, 1984), p. 31.

³⁸ Michael R. Gordon and General Bernard E. Trainor, The Generals' War, (Boston: Little, Brown and Company, 1995), pp. 341.

³⁹ Ibid., pp. 362, 372-377.

⁴⁰ Ibid., p. 389.

⁴¹ Ibid., p. 393.

⁴² Ibid., p. 381.

⁴³ Table of Organization and Allowances 87000A200 is the Objective TOE for the fully modernized mechanized infantry division. TOE 87000A200 is current as of November 1996. Each organization has its own TOE. It would be too cumbersome to include each in this paper nor is it necessary. References to TOE 87000A200 are used for example only. Specific details of other organizations should be drawn from individual TOEs.

⁴⁴ These are only the assigned vehicles organic to the division. The division in the field will also operate with outside attachments. The vehicle count was about 8,600 in both the 1st Armored Division and the 24th Mechanized Infantry Division during OPERATION DESERT STORM. See Gordon, The Generals' War, pp. 385 and 401.

⁴⁵ Field Manual 71-100 Division Operations, p. 3-3.

⁴⁶ Field Manual 71-100 Division Operations, pp. 1-5, 3-4.

⁴⁷ Ibid.

⁴⁸ The 2nd Infantry Division, located in South Korea, is a hybrid organization consisting of both heavy and light brigades so it will not be discussed further in this paper.

⁴⁹ "Command and Staff," listing in Army Green Book, pp. 198-200.

⁵⁰ All station to port distances are from Military Traffic Management Command, Logistics Handbook for Strategic Mobility Planning, (Newport News, VA: Department of the Army Military Traffic Management Command, April 1994), Tables C-2, C-3, and C-4.

⁵¹ "Command and Staff," listing in Army Green Book, p. 204.

⁵² Field Manual 71-100 Division Operations, p. 1-4.

⁵³ Clinton, A National Security Strategy of Engagement and Enlargement, p. 14.

⁵⁴ Geoffrey Blainey, The Causes of War, (New York: The Free Press, 1988), pp. 59, 108 - 112, 293.

⁵⁵ National Military Strategy of the United States of America, p. 18.

⁵⁶ Ibid.

⁵⁷ Perry, Annual Report to the President and Congress, p. 37.

⁵⁸ U.S. Army, Field Manual 100-5 Operations, (Washington, DC: Department of the Army, June 1993), pp. 2-10 - 2-11.

⁵⁹ General John M. Shalikashvili, Chairman of the Joint Chiefs of Staff, Joint Vision 2010, (Washington, DC: Chairman of the Joint Chiefs of Staff), pp. 22-25.

⁶⁰ Clinton, A National Security Strategy of Engagement and Enlargement, p.13.

⁶¹ Major General John Keane, Commanding General of the 101st Airborne Division (Air Assault) in April 1995. Quoted in U.S. Army Field Manual 71-100-3 Heavy Division Operations Tactics, Techniques, and Procedures, (Washington, DC October 1995) p. xx.

⁶² General William W. Crouch, "Forward Deployed and Projecting Power", Army Green Book, p. 72.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Ibid.

⁶⁶ U.S. Army Center for Army Lessons Learned, Task Force Eagle Initial Impressions Report, (Fort Leavenworth, KS: Center for Army Lessons Learned, May 1996) p. 124. This material is also based on a conversation on November 20, 1996 with Major Phil Kaiser and Captain Fred Johnson, both from the Center for Army Lessons Learned, who had been to Bosnia to observe 1st Armored Division's operations there. The number of dismounts (12 in this case) is not fixed by doctrine but was established by Tactics, Techniques, and Procedures (TTP) based on the needs in Bosnia.

⁶⁷ U.S. Army Center for Army Lessons Learned Observation Form, Captain Fred Johnson the Observer, dated November 14, 1996. Not all of the 50 missions were checkpoints or patrols however they may have been unrelated to one another and usually involved small unit activities.

⁶⁸ The bulk of a heavy division's dismounted capability is made up of infantrymen. The greatest number of infantry available to the heavy division is 2,180 authorized in the mechanized infantry division (Table of Organization and Equipment 87000A200, personnel recapitulation, pp. 66, 67.). Only 1,080 of these infantrymen are assigned as dismounts. The remainder are fighting vehicle crewmen or are senior leaders who have responsibilities other than functioning as a dismounted infantryman. The disadvantage in dismounting the vehicle crewmen is that the vehicle with its communications and weapon systems is left unmanned and of little use.

⁶⁹ 1st Brigade, Task Force Eagle map of Area of Operation provided by Captain Fred Johnson of Center for Army Lessons Learned, November 20, 1996.

⁷⁰ U.S. Army Center for Army Lessons Learned, Task Force Eagle Initial Impressions Report, p. 125.

⁷¹ Perry, Annual Report to the President and the Congress, p. 169.

⁷² U.S. Army, Field Manual 71-100 Division Operations, p. 1-3.

⁷³ Perry, Annual Report to the President and the Congress, February 1995, p. 27.

⁷⁴ James A. Winnefeld, The Post-Cold War Force-Sizing Debate, (Santa Monica, CA: RAND, 1992), p. 42.

⁷⁵ President George Bush, "Address to The Aspen Institute" (August 2, 1990), quoted in Marine Corps Gazette (Quantico, VA: Marine Corps Association, November 1992), p. 71

⁷⁶ Weigley, History of the United States Army, pp. 295 - 312.

⁷⁷ Military Traffic Management Command, MTMC TEA Reference 94-700-2, Logistics

Handbook for Strategic Mobility Planning, (Newport News, VA, April 1994), p12 Table 1 describing unit characteristics of six army division types. Note: The data in this reference is unclassified. It is used by the Military Traffic Management Command for their exercises. If the classified movement planning data is needed for actual deployment, use Air Force Publication 76-2, Airlift Planning Factors, MTMCTEA Report OA 90-4f-22, Deployment Planning Guide, and MTMCTEA Report OA-88-4a-33, Unit Movement Requirement Simulation Model for Sealift.

⁷⁸ Ian O. Lessor, "The Mobility Triad-Airlift, Sealift and Pre-positioning in American Strategy", Journal of the Royal United Services Institute for Defence Studies (RUSI), (Whitehall, London, March 1986), pp. 31-35.

⁷⁹ James K. Matthews and Cora J. Holt, So Many, So Much, So Far, So Fast, (Washington, DC: Office of the Chairman of the Joint Chiefs of Staff and the United States Transportation Command, 1995), p. 18.

⁸⁰ MTMCTEA Reference 94-700-2, Logistics Handbook for Strategic Mobility Planning, pp. 80, 81. Tables 35 and 36 describe aircraft required to move various division types. Number of aircraft vary to move an armored division or a mechanized infantry division so are rounded here to simply reflect the prohibitive nature of moving the heavy division by air alone.

⁸¹ Ibid., p. 71. Table 26.

⁸² Lessor, "The Mobility Triad-Airlift, Sealift and Pre-positioning in American Strategy", p. 31.

⁸³ MTMCTEA Reference 94-700-2, Logistics Handbook for Strategic Mobility Planning, p. D-5. Table D-2 Estimated Transit Times.

⁸⁴ Ibid., p. 57. Table 18, DESERT STORM Average Shiploading and Unloading Times.

⁸⁵ Ibid., pp. 58 & 59. Tables 19 & 20 Strategic Sea Transport Requirements.

⁸⁶ Unit History: 1st Armored Division in OPERATION DESERT SHIELD. Saved in the Center for Army Lessons Learned Database, DESERT SHIELD After Action Reviews.

⁸⁷ Lessor, "The Mobility Triad-Airlift, Sealift and Pre-positioning in American Strategy," p. 33

⁸⁸ Ibid.

⁸⁹ Ibid.

⁹⁰ Major Mark L. Hayes, USMC, "Sealift: The Achilles' Heel of our National Strategy", Marine Corps Gazette, (November 1992), pp. 72-75.

⁹¹ Dennis Steele, "New Strategic Mobility Initiative", Army (Arlington, VA: January 1993), p. 41.

⁹² United States Army Command and General Staff College, Student Text 101-6: G1/G4 Battle Book, (Fort Leavenworth, KS: United States Army Command and General Staff College, 1995), p. 1-5.

⁹³ Ibid., p. 1-6.

⁹⁴ Matthews, So Many, So Much, So Far, So Fast, p. 119.

⁹⁵ Ibid.

⁹⁶ Ibid., pp. 118-119. The Prepositioning ships began arriving in the Area of Responsibility on 17 August 1990 and the first Fast Sealift Ship (Capella) arrived on the 27th.

⁹⁷ Perry, Annual Report to the President and the Congress, p. 171.

⁹⁸ Gordon, The Generals' War, p. 341.

⁹⁹ Matthews, So Many, So Much, So Far, So Fast, p. 12.

¹⁰⁰ U.S. Army Center Lessons Learned, The Effects of Peace Operations on Unit Readiness, (Fort Leavenworth, KS: Center for Army Lessons Learned, February 1996), p. 7.

¹⁰¹ U.S. Army Center for Army Lessons Learned, The Effects of Peace Operations on Unit Readiness, p. 11.

¹⁰² U.S. Army Center for Army Lessons Learned, Tactics, Techniques, and Procedures for Sustainment Training While Employing (DRAFT), (Fort Leavenworth, KS: Center for Army Lessons Learned, October 1996) Section IV.

¹⁰³ Captain Eric Glenn of the 1st Brigade, 1st Armored Division, interview by author, 18 January 1997. Captain Glenn commanded an infantry company in 1st Brigade, 1st Armored Division during its deployment to Bosnia.

¹⁰⁴ U.S. Army Center for Army Lessons Learned, News From the Front, (Fort Leavenworth, KS: Center for Army Lessons Learned, November-December 1996), p. 5.

¹⁰⁵ U.S. Army Center for Army Lessons Learned, News From the Front, pp. 8-9 and interview with CPT Glenn. CPT Glenn's company spent one week on the range conducting Table VII and Table VIII gunnery qualification. This was the only gunnery period his company had during the deployment.

¹⁰⁶ Perry, Annual Report to the President and the Congress, p. 176.

¹⁰⁷ Ibid., p. 170.

¹⁰⁸ Matthews, So Many, So Much, So Far, So Fast, p.12.

¹⁰⁹ Colonel James M. Dubik, "The New Logic," Armed Forces Journal International, (January 1997), pp.42-44.

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